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THE PSYCHOLOGY OF ORGANIC MOVEMENTS.[1]

By I. MADISON BENTLEY.

One of the strongest tendencies in current psychology is the tendency to emphasize motor activities of the organism. This tendency springs from a threefold root. It rises partly from the modern doctrine of the intimacy of psychophysical relationships, partly from the influence of general biology, and partly from direct analysis of mind itself.

Precisely what the relation between mind and movement is, and precisely what its psychological significance is conceived to be, depend, in large measure, upon the individual's general attitude toward scientific enquiry. Organic movement is apt to wear one aspect when consciousness is interrogated for consciousness' sake, and quite a different aspect when mind is considered as a means to some end;—its aspect and significance depending again upon whether the end be organic welfare, or organic development, or social progress, or the acquisition of knowledge, or conduct, or philosophical construction.

To assume any single one of these attitudes at the outset would implicate us in a partisan treatment of the problem at hand. And, in order to make my discussion as comprehensive as possible, I shall separate the specific psychological problems involving organic movement, which are common to all systems, from the theories—especially recent theories—of consciousness, which are pre-eminently 'motor' in terminology and tendency. The only initial assumption that I need to make in proposing this twofold treatment of what has been indefinitely called 'the motor problem' is that all psychologists, of whatever creed or

[1] Read, with omissions, before the Cambridge meeting of The American Psychological Association, December, 1905.

of whatever school, are, from some point of view, primarily interested in the scientific investigation of consciousness, and this assumption, we may fairly say, is implied in the very term 'psychologist.'

First then, as to facts. The specific psychological problems which have received in their solution overt reference to organic movements may be divided into six principal groups.

I. The general analysis and description of action. Action fills a large chapter in the history of psychology. While early interest centered around its relation to the volitional activity of the individual, *i. e.*, while action was, in the older psychologies, principally identified with will and its expression, the opening of the modern era replaced this general interest by a more empirical study of action for its own sake. Of the two tendencies in this era—the tendency toward analysis and the tendency toward measurement of psychophysical process and function—only one, the latter, made much, at the beginning, of the movement side of action. Analysis of what are usually though ambiguously called the organs of sense, revealed an amazing number of conscious 'qualities,' but analysis of the 'organs of movement' revealed a paucity of conscious qualities; while, on the other hand, nothing offered so good a leverage for the measurement of capacity as the muscles and tendons,—witness the fertility of method for lifted weights and eye movements. And the poverty of movement as regards consciousness was at the same time more than offset by the doctrine of the *Innervationsgefühl*—a persistent echo of the doctrine of an elementary faculty of will.

However, the two methods have not remained separated, dividing equally the spoils of consciousness, but both analysis and measurement now claim a common territory,[1] the whole field of psychology, thus disposing of the fiction of a twofold mind, 'receiving' and 'reacting,' or 'sensory' and 'motor.'

But to return to the specific problems of action. The classical form of action, within the laboratory, is the 'reaction experiment.' A vagrant charge of astronomy and physiology, the reaction experiment became, under psychological direction, a means for measuring the duration of certain mental functions; cognition, recognition, association, etc. Later in its history came the period of interpretation, which brought the distinction between sensory and motor reactions and the famous discussion of reaction-types. Still later came the indiscriminate use of the reaction as a differential test—mental, physiological, anthropological and abnormal,—a use, by the way, to which this association has, from year to year, cheerfully sacrificed its members.

[1] *Cf.* E. B. Titchener: *Experimental Psychology*, II, Pt. i, 1905, xxxviii, Pt. ii, 1905, 405.

The latest stage of the reaction experiment is the stage in which the experiment is used, both in research and in drill, as a means to the analytic study of the action-consciousness;—for the introspective description and classification of the various forms of action, impulsive, instinctive, automatic, discriminative, and the like.[1]

II. The study of special actions. Within this group fall a great variety of actions which involve some specialized movement apparatus. The most important are, perhaps, speech (vocal coördination, physical and psychophysical phonetics, aphasia, etc.), writing (analysis of writing movements, graphology, diagnostic use of writing in mental disorders), arm movement (conditions of movement, rate, precision, extent), and eye-movement (rate, function in reading, inhibitory effects, laws and relations to space-perception). This rough and incomplete catalogue of special actions suggests the wide range of interest in these special movement-complexes and their multitudinous relations to consciousness.

III. Expressive movements. Again, a rough classification will be sufficient for our purposes. We may divide these movements into *gross movements* (gesture, offensive, defensive, and acquisitive movements, bodily attitude and play of feature), and *minute movements* (changes in the vaso-motor and respiratory apparatus). The range of conscious processes which these movements have been supposed to indicate is as wide as consciousness itself. It is to be noted, moreover, that the employment of expressive movements, in one form or another, is essential to the study of the consciousness of the animal and of the child.

IV. Movement as an essential factor in certain typical mental complexes. Here movement is not regarded as symptomatic of, but as contributory to, consciousness. Emotions and sentiments, rhythm, mental imagery, space-perception, and the perception of self, are all instances that fall under the rubric.

V. Movement regarded as work. This class of problems strongly suggests the influence on psychology of mental pathology. The psychology of work owes most to Kraepelin who, together with his students, has examined the factors, influences and results of work and has devised methods for its registration. French and Italian psychologists (notably Féré and Mosso) have contributed much both to the methods of ergography and dynamometry, and to the analysis of the factors, physical and mental, which influence the individual's working capacity.

VI. Movement regarded as play. I have ventured to place play in a class by itself, although its relations both to express-

[1] *Ibid.*, Pt. ii, 356.

ive movements and to work are obvious. Inasmuch, however, as play involves a special mental attitude in which movement is more than symptomatic and yet less than accomplishment for the sake of accomplishment, it deserves, I think, a special place. Interest in play has centered in classification of plays, in theory, and in pedagogical applications.

So much on the *factual* side of organic movement in psychology. Before I pass to the discussion of 'motor' theories, I should like, however, to point out that all these facts just surveyed are common property of all psychologies and that they are, moreover, to be taken into account by any doctrine which professes to give, in motor terms, a general interpretation of consciousness.

It must, at the same time, be borne in mind that the facts do not necessarily demand a general 'motor' interpretation. It is, on the contrary, quite possible to distribute these problems up and down the psychological system, giving each its own particular setting. This mode of distribution is, for example, followed by Wundt in what stands to-day as the most seasoned and the most closely articulated of current systems of psychology. The system offers no single 'motor' problem. Movement is, however, not neglected. It appears again and again; now as a sign of consciousness, now as an essential factor in the perception of space, now as an element in the various forms of action, or as symptomatic of conscious states and processes, or as a condition of fatigue, or as a source of æsthetic and emotive components, or as concerned in language and thought.

But, in contrast to this piecemeal incorporation, we find in various quarters attempts made to consolidate motor problems into one big general problem whose solution is to settle, once and for all, the relation between consciousness and movement. To these general 'motor' theories we now turn. We find that they fall into two classes: (1) theories that refer the character of the total consciousness to the interplay of motor mechanisms and (2) theories that regard the total consciousness as a primary factor in the motor adjustments of the organism. One type of theory emphasizes the motor *conditions* of consciousness, the other its motor *consequences* or *results*.

First, among theories of motor conditions, permit me to recall to you the theory outlined by Ribot in his brilliant essay on the attention.[1] The theory is not new;—Ribot himself finds it in Descartes—but I refer to it for the sake of perspective. Its author stands midway between the earlier English psychologists,—Bain and Spencer,—who emphasized the organic and the evo-

[1] Th. Ribot: *Psychologie de l'attention*, Paris, 1889.

lutionary functions of mind, and a later group, mostly Americans, who owe more than appears on the surface to Ribot's doctrine that the unity and the organization of consciousness depend solely and directly upon organic movement, and that movements and movement-inhibitions represent primary needs or tendencies[1] which subserve organic adaptation.

Following Ribot, we come upon theories—still theories of the first class—which may be called *central psychophysical* theories of organic movement. These theories seek to state more precisely the way in which the central motor mechanism conditions consciousness. Typical of this class is the *Aktionstheorie* of Münsterberg.[2] The theory substitutes, you will recall, an antagonistic subcortical mechanism of motor discharge for the cortical mechanisms employed by associationists and apperceptionists. This mechanism imposes a dynamic regulation upon the higher centres and, at the same time, affords a necessary condition for all psychophysical functions. Moreover, it is to be noted that the theory not only repeats the emphasis commonly laid upon the integrity of the arc-like functions of the nervous system, but also insists upon the necessity in all central functions of discharge in a single downward direction, *i. e.*, toward the centres for muscular movement. Without entering into the merits of the theory, it may be observed that just as opposing central theories incline to a neglect of this avenue of discharge, the 'action' theory, by overlooking the *general permeability* of the cortex, inclines, in its extreme position, to a neglect of neural tendencies and aptitudes other than motor. Nevertheless, the theory, by laying stress on the general psychophysical *disposition* of the brain and on corresponding mental values and gradations, instead of on mere conscious qualities and their substrate, calls attention to the fact that the study of consciousness is not completed by an analysis into simple processes or into primary functions, but that consciousness must also be regarded as a *state* with a given form, configuration, and with a given tendency and direction of change. It is 'vividness,' the primary characteristic of the attentive state, that is especially provided for in the theory. To make the point clearer, I may be permitted parenthetically to observe that the investigation of abnormal minds has performed its greatest service for general psychology in the discovery that mental derangement and disorder are, in large measure, derangement and disorder of *general state*, and not of

[1] These primary needs or tendencies have recently been made the basis of a biological psychology; see G. Spiller in his *The Mind of Man*, London, 1902.

[2] H. Münsterberg: *Psychology and Life*, 1899, 91; *Grundzüge der Psychologie*, I, 1900, 525 ff.

any special group of processes. We have come to recognize dream, hypnotic, trance, fatigue, delirious, exalted, depressed states, and the like, and to regard these as aberrant forms of the states of the normal mind.

But while we may recognize the importance for the psychology of states of the 'action' theory, we must not overlook the fact that the theory shares its advantage with the older apperception theory, as formulated by Wundt. This theory has, no less, its mechanism for inhibition, selection and synthesis, and where the motor-discharge theory urges the primacy of motor readiness, hindrance and facilitation, the rival theory points to a mass of cortical dispositions and tendencies which are, we may assume, no less important as temporary conditions of the general temper and trend of consciousness.

When we turn to the second class of motor theories—the theories which regard especially the motor *consequences* of consciousness—we come first upon a *general tendency in psychological interpretation* which really takes the place of definite and well-articulated theory. But this tendency (or, perhaps, better, attitude) is so closely interwoven with our problem that it must be taken into serious consideration. It regards consciousness as a forward-moving, constructive process, an activity, whose end or function is organic coördination and organic adjustment.

There is, now, nothing necessarily distinctive about a psychology that regards mind as an activity. Activity psychologies are, and always have been, plentiful. To this class belong, *e. g.*, the Wolffian psychology of faculties, the Herbartian psychology that possessed, nominally, a single faculty, and that still preserves its activities in the writings of Lipps, one of the later trends of English psychology, represented by Ward and Stout, the Austrian school of Meinong and Alfred Fouillée's system based on mental forces.

But the peculiarity of the coördination type of activity is that—if I may use the expression—it 'biologizes' consciousness. It represents mind as harmonizing, adjusting, squaring, adapting to its environment the organism that is fortunate enough to possess a mind. While it has a mixed lineage, it seems most closely to resemble, among antecedent systems, the Spencerian psychology of half a century ago. Herbert Spencer, you will remember, regarded psychology as "a specialized part of biology," [1] and psychological phenomena—when considered objectively—he identified with "nervo-muscular adjustments by which the higher organisms from moment to moment adapt their actions to environing co-existences and sequences." [2]

[1] Principles of Psychology, I, N. Y., 1890, 138.
[2] *Ibid.*, 141.

The modern type of 'activity' psychology which I have in mind is frequently spoken of as 'functional' or 'motor;' but since it regards mental functions from a single point of view, namely, adjustment,—whereas all psychologies of activity, whether of faculties or not, are, at the same time, in so far as they presuppose an end or goal of activity, psychologies of function,—and since *all* current psychologies share the responsibility of 'motor' problems, it will be better for my purpose to speak of it as 'reactionism.' The term 'reactionism' is suggested both by the frequent employment in 'functional' literature of the term 'reaction' and by the emphasis laid on organic adjustments and adaptive responses to problematical situations. If, indeed, the use of the term needs further justification, it may be found in the significant fact that early presentations of the point of view before us set out from a discussion of 'reaction' in the more traditional sense. I have in mind Baldwin's emphasis laid on the 'circular' reaction,[1] Angell and Moore's[2] 'functional' treatment of reaction, and Dewey's[3] re-interpretation of Meynert's classical myth of the Child and the Candle,—an interpretation that has become no less classical in certain quarters than the original itself.

My interest in reactionism must, at present, be confined to its use of organic movement. Its teaching on this point needs little elaboration. Dewey, in his article on the reflex-arc, just referred to, contends that neither sensation nor organic movement comes to consciousness as specific 'contents,' but only as 'function,' *i. e.*, as one phase of "coördination." "Sensation, as stimulus," he says, "is always that phase of activity requiring to be defined in order that a coördination may be completed"[4] and, similarly, "motion as response, . . . is whatever will serve to complete the disintegrating coördination."[5] Both are parts of an act of coördination and this act is, on the physiological side, a redistribution of 'tensions' and a search for a new neural equilibrium—an aspect of the doctrine that has been dwelt upon in different connections by Bawden and by Judd.

Now the notion of functional interplay of sensory and motor mechanism is, of course, not new. It is prominent, *e.g.*, in the writings of Bain; and Ribot's essay, mentioned a moment ago, is just an attempt to show that motor and sensory factors are inextricably interwoven in the very heart of consciousness; and,

[1] J. M. Baldwin: *Mental Development: Methods and Processes*, 1895, 132, 374.
[2] J. R. Angell and A. W. Moore: *Psych. Rev.*, III, 1896, 252.
[3] John Dewey: *Psych Rev.*, III, 357; *cf.* T. L. Bolton: *Psych. Rev.*, IX, 1902, 537.
[4] *Ibid.*, III, 368. [5] *Ibid.*, III, 369.

once more, no one could admonish more positively against the psychological misuse of the reflex-arc than Wundt in the importance he has laid for thirty years on movement elements in perception, sensorial elements in action, and on both movement and sensorial factors in the state of attention. Physiologists who psychologize are, it is true, sometimes, perhaps often, guilty of a too abstract consideration of the two sorts of mechanism; but I cannot convince myself that the evil effects on psychologists themselves, of the reflex-arc concept, have been anything like as serious as Dewey assumes. An example is made of Baldwin who had, it was alleged, fallen into error in his *Feeling and Will*, but Dewey overlooks the fact that Baldwin had, the year previously, declared that "the distinction between sensory and motor consciousness is largely logical," that "all consciousness is both."[1] Were it a matter of just reprehension for past sins against the 'functional' faith, it might be pointed out that Dewey himself had, in his *Psychology*, been guilty of the heresy that sensations are actual contents and that their twofold function consists in bringing together 'nature and the soul' and in supplying the 'raw materials of knowledge.'[2]

When we approach reactionism more closely, and ask whether it invents its own 'motor' principles to explain the dynamic, adaptive effects of consciousness upon the organism or whether it borrows these principles from the general literature, we find that its principles are, for the most part, those that have seen much psychophysical service.

We note, in the first place, frequent appeal to the well-established physiological principle of motor discharge. This principle states that all neural excitations tend ultimately toward a motor outlet. The principle appears in various forms; in Bain's law of motor diffusion,[3] in the ancient law of 'excess discharge,' in G. H. Schneider's law of reduction of all movement tendencies to the primary movements of contraction and expansion,[4] and in the law of dynamogeny. The last law, especially, has been used so much by modern reactionism that it requires a word of explanation. The term 'dynamogeny' seems to have been proposed by the physiologist Brown-Séquard,[5] a man (by the way) whose history is closely linked with the history of the institution by whose generous invitation we are assembled. Later it was extended by Féré[6] to cover the vari-

[1] *Mental Development: Methods and Processes*, 462.
[2] *Psychology*, 1887, 33 f, 44 f.
[3] A. Bain: *The Emotions and the Will*, 3d ed., London, 1888, 4; *The Senses and the Intellect*, 3d ed., N. Y., 1888, 258, 271 *note*.
[4] *Vierteljahrsschrift f. wiss. Philos.*, III, 1879, 294.
[5] Art. *Dynamogénie* in *Dict. encyclop. des sciences méd.* (quoted by Ribot, *op. cit.*, 178).
[6] C. Féré: *Sensation et mouvement*, 1887, 30 ff.

ations produced by sensorial stimulation in muscular capacity. The principle of dynamogeny was introduced into our own literature by James and made a special case under the more general law of diffusion.[1] Baldwin,[2] in his law of dynamogenesis, seems to have confused the general principle of discharge with dynamogeny, for he has taken over the former principle, the principle that "every sensation"—to use his rather ambiguous words —"every sensation or incoming process tends to bring about action or outgoing process," and has christened it the law of dynamogenesis. The law, once renamed, furnishes, in Baldwin's hands, a method for child study—through the selection of simple and fundamental motor reactions—and it also supplies the "foundation stone of the theory of organic development." I shall not take time to follow the derivation of habit and accommodation (which involve, also, Schneider's affective shrinking and expansion, and the law of excess) and the adaptive processes of imitation. The important point to be noted is that organic movement becomes, in Baldwin's genetic treatment, not a mere 'expression' of consciousness, but, as an index of pleasure or pain, a means of producing, maintaining and augmenting vital processes.[3] Genetic dynamics—in so far as it may be identified with reactionism—thus falls naturally under our second type of motor theory, the type that pays chief regard to the motor consequences of conscious function.

Another recent motor theory to challenge our consideration is the 'motor-area' theory of Judd.[4] Although this is a theory of the first type, I have reserved it until now because it is closely related to reactionism. Setting out from certain facts of perception and of action, which he describes as coördinations, Judd, in the spirit of Ribot, James and Baldwin, again uses the law of motor discharge to explain the unity of consciousness. But instead of having recourse to the various peripheral mechanisms which Ribot had invoked, Judd turns to the centre and suggests that the common motor outlet of the Rolandic region is responsible for this unity. The theory minimizes the part that kinæsthetic sensations and images play in consciousness, but exalts the organizing function of a centrally situated 'motor' region. The 'motor process' becomes "the condition of fusion of all the coördinated impulses," and thus it is seen to be "not a factor of consciousness, but rather a condition of the unity of consciousness." [5]

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[1] W. James: *Principles of Psych.*, II, 1890, 379.
[2] *Methods and Processes*, 166; *cf. Feeling and Will*, 1891, 28, 281.
[3] *Op. cit.*, 238 ff, 478.
[4] C. H. Judd: *Yale Psych. Stud.*, N. S., Vol. I, 1905, 199; *cf.* W. McDougall: *Mind*, N. S., XXVI, 1898, 159 ff.
[5] *Op. cit.*, 214.

From the present preliminary statements of the theory, it is not quite evident whether its author intends it to be taken as a general theory of conscious synthesis, *i. e.*, whether Judd would agree with Baldwin that "every two elements whatever, connected in consciousness, are so only because they have motor effects in common," or as a special theory of space-perception. A fuller account of the theory will doubtless make this clear. If it is a general theory, we shall be told why the motor apparatus gives us now the spatial type of consolidation, now the qualitative, now the temporal, now the assimilation of 'verbal directions, bell and stimulus' in the reaction experiment, and now some other type of assimilation. If it is, on the other hand, a theory of space-perception, we may expect to learn whether the motor factor accounts only for the unity of neighboring objects in space (as it seems now to do) or whether it goes deeper and explains the spatial pattern itself (*i. e.*, extension together with the variety of spatial relations) as, *e. g.*, Wundt's theory of extensive fusion does. Furthermore, since the assumed motor factor is obviously related to the general state of consciousness,—shown, *e. g.*, in the essential part that distraction plays in 'geometrical' illusions[1]—we may also look for a statement of its significance for a doctrine of attention. In any event, it is to be noted that the rôle of organic movement is not, in this theory, so fundamental to consciousness as in the theories of Ribot and of Münsterberg; for, in these, movement underlies not simply the *unity* of processes but the existence of consciousness itself.

I should like, if I can before I close, to come to more definite terms with the problem which organic movement presents to a reactionistic psychology. Although, as I said before, every movement within the organism which affects consciousness is of interest to the modern psychologist of whatever system or school, it is not to be denied that functional psychology (if you will pardon the use of so ambiguous a term[2]), in so far as it lays emphasis on organic adjustment, whether for the sake of 'genesis' or of temporary adaptation, has a peculiar interest in the motor apparatus and the motor functions of the organism. The reason for this emphasis on adjustment we cannot stop to inquire; whether it is a courteous response to the biologists' appeal for aid, or a primary biological interest in the psychologist himself, or whether biology, which has for many

[1] *Cf.* Th. Lipps' 'motor' theory of optical illusions in *Raumæsthetik und geometrisch-optische Täuschungen*, 1897.

[2] The writer has in mind a dozen or more recent definitions of 'function' or 'functional' couched in terms of psychology, of psychophysics, of logic, of biology, of 'energetics,' and of 'pure experience.'

years generously indulged itself in hypothesis and speculation, appeals to speculative minds in psychology, or whether mental activity viewed from a new angle promises important returns to logic and æsthetics and sociology and education and epistemology, we must leave unanswered. The biologizing psychologist is, for whatever reason, in our midst, and the logical relation between his view of consciousness as coördination and his interest in organic movements remains an important part of our task.

The secret of this relation lies, I think, in the fact that reactionism is at bottom an implicit doctrine of attention. Let us see what evidence for this view the literature offers. Dewey remarks, in connection with his functional treatment of stimulus and movement, that "it is the motor response *or attention* which constitutes that which finally becomes the stimulus to another act."[1] Again he says, "sensation is that phase of a coördination requiring *attention*, because, by reason of the conflict within the coördination, it is uncertain how to complete it,"[2] and in another place he remarks that the stimulus "furnishes the motivation *to attend* [italics all mine] to what has just taken place; to define it more carefully." Attention, then, is the cardinal activity that 'defines,' that 'searches,' that 'discovers,' that 'constitutes' both 'stimulus' and 'response.' In short, it is the activity that "decides how a beginning coordination should be completed."[3] In just what relation this arch-activity of attention stands to the 'minor acts' called 'stimulus' and 'response,' I confess myself to be unable to understand. Mead declares that 'elements' and 'images' are "reciprocal functions" for the "psychical state" which have "now this expression and now that." "What this expression is," he continues, "depends upon the selective activity of attention or apperception—an activity which is practically co-terminous with the psychical state as such."[4] While this passage can scarcely be said to convey a lucid idea of the functional relation of contents to attention, it does bring strong evidence for the relevancy of my suggestion that the all-powerful and all-important activity of reactionism is simply attention regarded as a function. Angell subscribes to this functional view of attention in his recent *Psychology*. Although Angell admits that attention *may* be regarded, as he says, 'structurally,' *i. e.*, as having focus and margin, he frankly declares himself to be chiefly interested in it as "an instance of mental activity," "as a purposive, forward-looking type of action," though he does

[1] *Op. cit.*, 363. [2] *Ibid.*, 368. [3] *Ibid.*, 369.
[4] G. H. Mead: The Definition of the Psychical, 38 (in *The Dec. Pub. of the Univ. of Chicago*, 1st ser., III, 1903).

not think it necessary "rigidly to dissever these aspects." But the fundamental importance of the *act* of attention appears when Angell announces that he means in his book to "regard all the operations of consciousness as so many expressions of organic adaptations to our environment," [1] and that in adaptation the "actual work of accommodation" goes on at the 'point of attention' which "represents the very heart of consciousness." [2] Finally, Baldwin maintains that "the problem of adaptation is really the problem of selection," [3] and that "in attention we have, undoubtedly, the one selective function of consciousness," a function which is "the most habitual of all forms of motor reaction." [4]

If we may take these statements as representative of the reactionistic attitude in psychology, we may fairly conclude that, for this phase of the science, attention is the primary mental activity, and that it is primary because its function is to further, through the agency of organic movements, the "adaptive operations of organic life."

But attention, no less than conscious participation in all organic movement, is common psychological property. No modern system attempts to get on without it. Its relation to the motor activities of the organism forms, therefore, a second natural meeting place for reactionism and the analytic and structural types of psychology. For the latter, attention is essentially a state,—not a structure or a process,—with definitely marked characteristics and with important motor conditions and consequences, which are as accurately laid down as present physiological knowledge will allow. For the former, I may repeat, attention is essentially an activity whose operations are directed toward adaptive movements of the organism.

Three inductions remain to be drawn from this comparison. The first is that attention regarded as *activity* stands just as much in need of definition, description and explanation as does attention regarded as *state;* the second is that unless adequate definition, description and explanation are forthcoming, psychological reactionism stands in danger of basing its account of organic movements upon a faculty only less empty and less vicious than were the Wolffian faculties of a century and a half ago; and the third is that reactionism lies under the necessity of formulating a 'doctrine of functions' which shall set into mutual relation the primary functions of attention and all other functions that consciousness may reveal.

Permit me to say, by way of recapitulation, that there is no

[1] J. R. Angell: *Psychology*, 1904, 7.
[2] *Ibid.*, 64. [3] *Op. cit.*, 456. [4] *Ibid.*, 463.

single 'motor problem' pressing for psychological solution, that organic movements offer, instead, a variety of problems, and that these problems call for a discrimination of facts and theories. The facts fall, as we have seen, into numerous groups which demand detailed and specific treatment, while the theories emphasize either the motor conditions (first type) or the motor consequences (second type) of consciousness. As regards the first type, we have found a current disposition toward the construction of *central psychophysical* theories, but we must note that the actual central conditions of consciousness are so little known that almost any theory may receive recognition, while no theory brings proof or even commands general assent. The theories of the second type, on the other hand, are encouraged by a tendency (chiefly American), to return to reactionism.

Finally, I must repeat, current reactionism considers organic movement as an adaptive operation issuing from a mental activity, attention, which is ill-defined, and which stands, at present, in danger of becoming a vague ro empty power either of the organism or of the soul.